

**REMARKS**

**I. Introduction**

In response to the pending Office Action, Applicants have amended claims 2, 12 and 14 and the specification in order to further clarify the subject matter of the present invention. Support for the amendment to claims 12 and 14 may be found, for example, on page 8, lines 8-13 of the specification. No new matter has been added.

Applicants note with appreciation the indication of allowable subject matter recited in claims 9 and 10.

For the reasons set forth below, Applicants respectfully submit that all pending claims as currently amended are patentable over the cited prior art.

**II. The Objection To The Drawings**

The drawings were objected to because they fail to show the metal film 5 as described on page 16, line 14 of the specification. This is because Fig. 8, which is discussed on page 16, is a representation of an electronic component of the second embodiment of the present invention in which the metal film 5 has been oxidized to form the metal oxide layer 3. Thus, the metal film 5 is not actually shown in Fig. 8. However, as page 16 clearly indicates "similar elements to those in the first embodiment have the same reference marks, and the descriptions thereof are omitted. The construction shown in Fig. 8 differs from that described in the first embodiment in the material of substrate 1, namely, substrate 1 here is formed of organic substrate made from, e.g. glass epoxy." Thus, the oxidation steps including the metal film 5 are described on page 14 in the first exemplary embodiment and shown in Fig. 7C. However, the paragraphs on page 16 have been amended to remove the reference numeral 5 from the specification.

The rejection has also objected to Fig. 8 because numeral 11 is not described in the specification on page 5. However, we would point out to the Examiner that reference numeral 11, which represents a terminal electrode, is described on page 17 of the specification.

Furthermore, it was also alleged that a reference numeral for the elements “solid insulating protective film” and “conductive resistor” as described on page 12, lines 1-2 must be added. This requirement is without merit. The phrase “solid insulating protective film” is used to describe the metal oxide layer, which insulates and protects the conductive pattern, as is well known to those skilled in the art. In addition, the phrase “conductive resistor” is a specific example of the conductive pattern that the passage on page 11 and 12 describes. Thus, these phrases, which are not recited in any pending claims, are neither elements nor limitations and accordingly are not required to be shown in drawings. The phrases are used to describe the subject matter of the present disclosure.

In view of the above, Applicants respectfully request that the objections to the drawings be withdrawn.

### **III. The Rejection of Claims 2, 7, 12 and 14 Under 35 U.S.C. § 112**

Claims 2, 7, 12 and 14 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In response, Applicants have amended claims 2, 12 and 14 in order to overcome these rejections.

With regard to claim 7, the Examiner alleges that it is unclear what “electrode material” is referring to. Applicants are uncertain why this phrase is unclear. As is shown, the phrase is used throughout the specification (see, pages 1, 2, 4, 7 and others) to describe the material that comprises the electrode. For example, page 7, lines 20-23 states “Use of electrode material,

which contains at least Ag, in the conductive patterns allows the present invention to achieve reliable electronic components having fine conductive patterns which have less loss because of low wiring resistance.” Furthermore, page 12, lines 13-19 fully describes the composition and use of electrode material. Accordingly, Applicants respectfully request that the rejection of claims 2, 7, 12 and 14 be withdrawn.

**IV. The Rejection Of Claims 1 And 2 Under 35 U.S.C. § 103**

Claims 1-8 and 12-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nishigaki et al. (USP No. 4,795,670). Applicants respectfully traverse this rejection for at least the following reasons.

With regard to the present invention, claim 1 recites an electronic component comprising: a conductive pattern provided on an insulating substrate; a metal film formed by a plating method on a surface of the conductive pattern; and a metal oxide layer formed by oxidizing the metal film and disposed on the surface of the conductive pattern.

It is acknowledged in the Office Action that Nishigaki fails to disclose that the copper conductor is a metal oxide layer. However, he alleges that the copper conductor would eventually become a copper oxide layer because the copper conductor does not have any surface treatment and therefore would oxidize over time.

This rejection is without merit. It is well-known in the art that conductive pastes are formulated to produce conductive materials with resistance to oxidation. Thus, the Examiner’s allegation that the metal film disclosed in Nishigaki would undergo oxidation under normal conditions is inaccurate. In addition, although the copper metal film made in Nishigaki does not mention a surface treatment to prevent oxidation, the film could be further treated to prevent

oxidation, just as the Examiner concludes that the film could later undergo oxidation. Therefore, it is not inherent, as the Examiner suggests, that the metal film in Nishigaki must eventually be oxidized over time. Accordingly, as the Examiner has admitted that Nishigaki fails to disclose that the copper conductor is a metal oxide layer, Nishigaki does not teach or suggest a limitation wherein a metal oxide layer is formed by oxidizing the metal film and disposed on the surface of the conductive pattern.

In order to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 580 (CCPA 1974). At a minimum, as Nishigaki fails to teach or suggest an electronic component comprising: a conductive pattern provided on an insulating substrate; a metal film formed by a plating method on a surface of the conductive pattern; and a metal oxide layer formed by oxidizing the metal film and disposed on the surface of the conductive pattern, it is submitted that Nishigaki does not render claim 1 obvious. Accordingly, it is respectfully requested that the § 103 rejection of claim 1 be withdrawn.

**V. All Dependent Claims Are Allowable Because The Independent Claim From Which They Depend Is Allowable**

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

Furthermore, with regard to claims 7 and 8, the Examiner appears to have confused conductive paste 14 that fills through holes 13 with conductor pattern 16 (see, col. 6, lines 19-21 and 33 of Nishigaki). Thus, while it is alleged that the so-called conductive patterns are formed from a silver based conductive material such as Ag, Ag-Pd, Ag-Pt etc. (col. 6, line 20 of Nishigaki), Nishigaki is actually referring to the composition of the conductive *paste*. As the conductive paste is provided in the through hole, it is not provided on the insulating substrate. In addition, Nishigaki only teaches that the conductive pattern on the surface is comprised of copper. Accordingly, Nishigaki does not teach or suggest that the electrode material comprising the conductive pattern is at least Ag, or Ag-Pt and Ag-Pd as recited in claims 7 and 8. Therefore, Nishigaki also fails to disclose all of the limitations of claims 7 and 8 of the present invention.

## **VI. Conclusion**

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited.

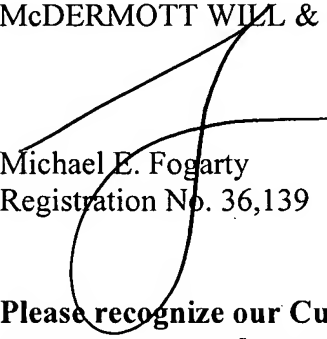
To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

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including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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